

Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554

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In the Matter of Amendment of Parts 2 and)
15 of the Commission's Rules to Permit Use)
of Radio Frequencies Above 40 GHz for New)
Radio Applications)

Federal Communications Commission
Office of Secretary

ET Docket No. 94-124

Petition of Sky Station International, Inc. for)
Amendment of the Commission's Rules to)
Establish Requirements for a Global)
Stratospheric Telecommunications Service in)
the 47.2-47.5 GHz and 47.9-48.2 GHz)
Frequency Bands)

RM-8784

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FURTHER COMMENTS OF
SKY STATION INTERNATIONAL, INC.

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**FURTHER COMMENTS OF
SKY STATION INTERNATIONAL, INC.**

On March 20, 1996, Sky Station International, Inc. ("Sky Station"), filed Additional Comments^{1/} in this proceeding; 34 parties then filed comments in response,

^{1/} The full title was "Request to Establish New GSTS Service, Additional Comments and Petition for Rulemaking." For reasons explained below, the first and third components of that heading can be mooted by the Commission's taking the action requested in this pleading.

At the same time, Sky Station submitted a preliminary Application as a placeholder for and illustration of the service it could provide. Because of the adjustments recommended in these Further Comments, Sky Station asks that the Commission hold that Application in abeyance at least until it acts in this proceeding and Sky Station has an adequate opportunity to amend it accordingly.

all but three supportive; and on May 16, Sky Station filed Reply Comments. Much has transpired since then on many fronts: scientific, business, international and regulatory. These developments have caused us to adjust the proposed regulatory framework for the stratospheric service that Sky Station seeks to offer the public. These Further Comments describe these fine-tunings and the reasons they are appropriate. What has not changed, indeed has been enhanced and made even clearer, is the splendid opportunity provided by this Millimeter Wave Proceeding^{2/} promptly to facilitate realization of the public benefits of Sky Station's proposed service.

SUMMARY: REQUESTED ACTION

Since filing its Additional Comments and Reply Comments, Sky Station has worked vigorously and effectively, with the Commission's assistance, to achieve suitable accommodations in the WRC '97 process for its proposed service. Its experience in this complex and vital arena of regulatory activity convinces Sky Station that (1) its proposed operations constitute fixed services; (2) stratospheric fixed service requires a total of 600 MHz, for which fixed satellite services should not be eligible; (3) each operator requires a segmented frequency pair of 100 MHz bands; and (4) the paired frequency bands should be separated by at least 500 MHz. Sky Station's preference is that the 300 MHz plus 300 MHz allocation for stratospheric fixed service come from the 47.2-48.2 GHz band, although the spectrum boundaries could be somewhat higher or lower.

^{2/} The Millimeter Wave Proceeding refers to the above-captioned ET Docket No. 94-124.

Further, in contrast to Sky Station's earlier position, this allocation need not be made to a new and special global stratospheric telecommunications service, apart from other fixed service millimeter wave uses. A generic terrestrial flexible fixed (non-satellite) service allocation will suffice -- which means that Sky Station would have to compete with other aspiring fixed (non-satellite) users in auctions for this spectrum. In that regard, Sky Station endorses the Commission's proposal, see Millimeter Wave NPRM^{3/} at paras. 25-27, to use auctions to assign licenses in this proceeding. Multiple round auctions of national or super-regional licenses for terrestrial flexible fixed services would be consistent with the record in this proceeding and would advance the goal of efficient licensing.

The Commission can and should make the foregoing decisions by the end of February in a Second Report and Order in the Millimeter Wave Proceeding ("Second Report and Order"). The necessary predicate has already been laid in this proceeding, as reflected in the record. Moreover, Sky Station's proposed operations fit quite well within the service rules of Part 101 of the Commission's Rules. To the extent that Part 101 does not perfectly fit Sky Station's planned operations, existing rules can be readily adapted in the Second Report and Order by rule change or blanket waivers. Such a course is fully consistent with the Commission's commitment to flexibility, which it has demonstrated in various contexts by adjusting service definitions, service rules and technical requirements to embrace more advanced uses of the spectrum.

^{3/} Amendment of Part 2 and 15 of the Commission's Rules to Permit Use of Radio Frequencies Above 40 GHz for New Radio Applications, 9 FCC Rcd. 7078, 7083 (1994).

If, however, the Commission believes that it must create new service rules for this service, rather than adapt existing Part 101 for this purpose,^{4/} it should also by February launch a new notice of proposed rulemaking, prosecute it expeditiously and conclude it early enough in 1997 so that auctions may be conducted prior to WRC '97, which begins in late October 1997. Timing is tremendously important because of the inexorable WRC '97 schedule and the understandable insistence of the capital markets on certainty and specificity.^{5/}

I. BASIC ALLOCATION, CHANNELIZATION, AND LICENSING ISSUES

Spectrum allocation. The Second Report and Order should allocate the 47.2-48.2 GHz band for fixed (non-satellite) services, including stratospheric services, since this band is ripe for Commission decision. In the Millimeter Wave NPRM, the Commission solicited comments on proposed uses for the 47.2-48.2 GHz and other bands. Specifically, it proposed to allocate the 47.2-47.4 GHz band for unlicensed vehicular radar use and the 47.4-48.2 GHz band for the Licensed Millimeter Wave Service ("LMWS"). In December 1995, the Commission adopted its First Report and Order in the Millimeter Wave Proceeding, which declined to allocate the 47.2-47.4 GHz band for

^{4/} The Commission could also, under Part 101, create an "all-others" flexible or general millimeter wave service (non-satellite) category under the Part 101 generic category.

^{5/} While Sky Station has adequate financial resources for the present time, the economic burdens of auctions, deployment, and initial operation will require it to raise additional financial resources.

vehicular radar, electing the 46.7-46.9 GHz band instead.^{6/} As a consequence, the Commission should now allocate the entire 47.2-48.2 GHz band to the LMWS service, and particularly for fixed services (non-satellite). The Commission can allocate this band now because it is ripe for decision and not subject to serious dispute, even though other bands of the spectrum that are also the subject of this proceeding may need additional study and review.

Band segmentation. The Commission initially proposed to define LMWS to include any type of service permitted in the table of allocations. See Millimeter Wave NPRM at para. 21. It did this because, at the time, there was very little information on the highest use for this spectrum. The record that has subsequently been developed provides additional information demonstrating that in these bands these potential uses -- mainly ubiquitous fixed and fixed satellite services -- cannot share with each other.^{7/} As a consequence, effective spectrum management calls for band segmentation.

Also, at the time the Commission issued the Millimeter Wave NPRM, it proposed to model the LMWS service after LMDS, a fixed service in the 28 GHz band, though the spectrum allocation issues in the 28 GHz band had not yet been resolved. The Commission has since decided in the 28 GHz proceeding that fixed services and satellite

^{6/} Amendment of Parts 2, 15 and 97 of the Commission's Rules to Permit Use of Radio Frequencies Above 40 GHz for New Radio Applications, 11 FCC Rcd. 4481, 4487 (1995).

^{7/} See Sky Station's Reply Comments at 6-7 (May 16, 1996); see also Application of Motorola Satellite Systems, Inc. for Authority to Construct, Launch and Operate the M-Star System at 71 (Sept. 4, 1996) (in areas of high density of use, "coordination in these bands between the Fixed Service and the M-Star System may not be possible").

services generally cannot share spectrum.^{8/} The same conclusion applies to the spectrum at issue in the Millimeter Wave Proceeding.^{9/}

Channelization. Sky Station's Additional Comments, filed nine months ago, stated that there would need to be channelization. Therefore, this issue is within the scope of the Millimeter Wave NPRM and no further notice or new proceeding is necessary. Accordingly, in the Second Report and Order, the Commission can and should pair 100 plus 100 MHz bands in the 47.2 to 48.2 GHz band, with a separation of at least 500 MHz, though not all of this spectrum block need be channelized.

Service areas and other licensing issues. The Commission originally proposed to license the LMWS service based on MTAs. Id. at para. 24. Nine months ago Sky Station proposed a global service. Now it has become clear that national systems are likely to be developed in the 47.2-48.2 GHz band that will greatly serve the public interest. To accommodate these developments, the Commission should license at least some of the LMWS spectrum on a national basis or, alternatively, issue super-regional licenses (consisting of clusters of MTAs), as it did in narrowband PCS.^{10/} Also, consistent with spectrum caps in other services, Sky Station proposes a limit of one

^{8/} Rulemaking to Amend Parts 1, 2, 21, and 25 of the Commission's Rules to Redesignate the 27.5-29.5 GHz Frequency Band, to Reallocate the 29.5-30.0 GHz Frequency Band, to Establish Rules and Policies for Local Multipoint Distribution Service and for Fixed Satellite Services, 3 Comm. Reg. (P&F) 857, 865 (1996).

^{9/} The one exception is that fixed services can share with broadcast satellite service feeder links.

^{10/} See Section 24.102 of the Rules which provides for nationwide, regional, MTA and BTA narrowband PCS licenses. New FCC Form 415 contains a section for "wide area operations," where the applicant may check "Nationwide" or "Continental United States" -- indicating that national licenses are an option available to the Commission.

pair of 100 MHz bandwidths per licensee. The Millimeter Wave NPRM proposed a 50% spectrum cap. If this were applied to the 47.2 to 48.2 GHz band, this alternative would be acceptable to Sky Station. Finally, a 10-year license term as provided for in PCS and cellular would be appropriate and can be adopted within the scope of the present record. See Millimeter Wave NPRM at para. 25 (proposed ten-year license term). Because these are matters of public record in this proceeding, the Commission should proceed to resolve them in the upcoming Second Report and Order.

II. BASIC SERVICE RULES ISSUES

Many of the service rules issues discussed in this section have been open for comment during the two-year pendency of this proceeding, and the record, therefore, provides an adequate basis on which to resolve these issues in the Second Report and Order. Sky Station firmly believes that the Millimeter Wave Proceeding is a fully appropriate vehicle for establishing a flexible fixed service, including service rules, at least in the 47.2-48.2 GHz frequencies. The reasons for this conviction are set forth below.

A. The Commission Need Not And Should Not Launch A New Proceeding To Adopt LMWS Service Rules.

The Commission's Millimeter Wave NPRM in this proceeding addressed service rule issues, and hence it is free to and should resolve these issues in the Second Report and Order allocating spectrum and resolving the other issues discussed in section I of these Further Comments. In further support of this approach, it should be noted that the Commission initially proposed to incorporate LMWS into Part 21 of its Rules

(Millimeter Wave NPRM at para. 21), which in relevant part, has now become Part 101.

Thus, the proposal for treating the LMWS service under Part 101, as revised, is completely consistent with the Millimeter Wave NPRM. Also, the Millimeter Wave NPRM (at para. 23) proposed to model LMWS after LMDS, and LMDS is now included in Part 101. Since the Commission was also uncertain how LMDS services would actually evolve, the fact that there are questions about how LMWS services will evolve in the 47.2-48.2 GHz band is no reason to exclude them from Part 101.

Moreover, the definition of fixed services includes ancillary mobile services within its scope. A number of sections of Part 101 already contemplate mobile transmitters,^{11/} and the Part 101 frequency table shows that some bands accommodate mobile service.^{12/} For instance, Section 101.139(e) says type acceptance is not needed for low power portable transmitters, showing that such transmitters are allowed in this service. Furthermore, FCC Form 415 provides many transmitter class options, including "Mobile" and "Mobile and Temporary Operational Fixed." It also permits a radius of operations to be provided for a mobile antenna, rather than box coordinates.

The Commission has broadly defined mobile services like CMRS to include ancillary fixed services, even prior to amending its rules to allow for wireless local loop and other fixed services to be offered on a co-primary basis with mobile

^{11/} See, e.g., § 101.13(e) (mobile Multiple Address Systems).

^{12/} See §§ 101.101; 101.107 (table listing frequency tolerance requirements for fixed and mobile stations).

CMRS services.^{13/} By analogy, and connected with the Commission's general commitment to flexible uses, fixed services can and should be understood to include ancillary mobile services.

* * *

If the Commission chooses not to resolve all of these issues by adopting service rules in the imminent Second Report and Order, it can still use the Second Report and Order as the occasion to establish blanket waivers for the terrestrial flexible fixed (non-satellite) services, stratospheric fixed services in particular. The Commission recently took a similar approach in the Declaratory Ruling Decision enabling ITFS and MDS licensees to transmit in a digital mode. To expedite the development of wireless cable service, the Commission granted blanket waivers of certain technical rules applicable for an analog environment but incompatible with or unnecessary for a digital environment.^{14/}

Only if the Commission adopts neither of these proposed procedures for expediting adoption of LMWS service rules should it resort to launching a new notice of proposed rulemaking on the issues discussed in this section. But if it selects this least

^{13/} Amendment of the Commission's Rules to Permit Flexible Service Offerings in the Commercial Mobile Radio Service, 11 FCC Rcd. 8965, 8968-69 (1996).

^{14/} Request for Declaratory Ruling on the Use of Digital Modulation by Multipoint Distribution Service and Instructional Television Fixed Service Stations, 3 Comm. Reg. (P&F) 830, 847, 850-52 (1996).

preferred option, the Commission should issue the notice of proposed rulemaking as soon as possible, and in no event later than the Second Report and Order.^{15/}

B. The Commission Should Resolve Certain Service Rule Issues To Accommodate Stratospheric Fixed Services.

Sky Station urges that the Commission resolve the following service rule issues. Although these recommendations are presented here in the context of adapting the Part 101 rules, these recommendations are equally applicable for a stand-alone service governed by its own rules.

(1) The current Part 101 technical requirements (§ 101.21) should be made more flexible and accommodating. For example, the emission and power limitations (§§ 101.111, 101.113) and tower and other requirements, which apply to a terrestrial service (e.g., §§ 101.121, 101.127), should be adjusted either by a rule change in the Second Report and Order or on a case-by-case or blanket-waiver basis.

(2) Frequency coordination is generally required, § 101.103. If the Commission does not authorize national service areas, it should promulgate interference requirements in the Second Report and Order to deal with service area boundaries. A possible model includes the PCS rules (establishment of power flux density limitations at service area boundaries). Sky Station believes the Commission can and should resolve this issue in the Second Report and Order. Failing that, it should do so in an expedited notice of proposed rulemaking.

^{15/} Possibly the Commission could deal with some of these issues by adopting rules in the Second Report and Order, some by blanket waivers issued in the Second Report and Order and some by a new service rule notice of proposed rulemaking.

(3) The Commission should clarify that Part 101 allows a single station to serve an entire service area. Indeed, it already has adopted this approach for Part 101 renewal applications (§ 101.15). Alternatively, it should modify the Part 101 rules so that one blanket application is sufficient for each service area, rather than one per station, as is currently required (Id.). PCS provides a good model, authorizing blanket licenses for each market and frequency block, rather than for individual sites (§ 24.11(b)).

(4) Under Part 101, as currently worded, stations must be operational within 18 months from the time of grant (§ 101.63). However, Sky Station agrees with the Commission's tentative conclusion in the Millimeter Wave NPRM that mandatory build-out requirements for millimeter wave licensees are unnecessary because auction winners will have every incentive to use their frequencies as promptly as possible.^{16/} Id. at para. 25.

(5) Other modest changes in Part 101 would also be necessary to accommodate stratospheric LMWS. Thus, the Commission should modify Section 101.1 to include platforms in the stratosphere (but below "space"); modify Sections 101.101 and 101.109 to cover higher frequencies; and clarify that Section 101.109 allows paired 100 MHz bandwidths for stratospheric use on frequencies above 40 GHz. The Second Report and Order in the Millimeter Wave Proceeding should also resolve the band segmentation

^{16/} Alternatively but less desirably, the Commission could, as is the case for PCS, adopt reasonable five- and ten-year build-out requirements. It also should be noted that the Commission has adopted different construction requirements within the same service (in at least one case) for facilities licensed prior to the auction and facilities licensed post-auction. See §§ 21.43 (general 12-month construction period); 21.930 (replaced 12-month construction period with five-year build-out requirement).

issues between the fixed service and fixed satellite service. In addition, the Part 101 frequency table should be amended to accommodate stratospheric fixed services and to recognize that, as demonstrated in Sky Station's earlier Reply Comments, they can share only with broadcast satellite service feeder links and not with other fixed or fixed-satellite uses.

* * *

WHEREFORE, the Commission should take the steps described above.

Respectfully submitted,

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